Complete Summary

GUIDELINE TITLE

Adult low back pain.

BIBLIOGRAPHIC SOURCE(S)

Institute for Clinical Systems Improvement (ICSI). Adult low back pain. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2008 Nov. 66 p. [105 references]

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Adult low back pain. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2006 Sep. 65 p.

** REGULATORY ALERT **

FDA WARNING/REGULATORY ALERT

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- December 16, 2008 - Antiepileptic drugs: The U.S. Food and Drug Administration (FDA) has completed its analysis of reports of suicidality (suicidal behavior or ideation [thoughts]) from placebo-controlled clinical trials of drugs used to treat epilepsy, psychiatric disorders, and other conditions. Based on the outcome of this review, FDA is requiring that all manufacturers of drugs in this class include a Warning in their labeling and develop a Medication Guide to be provided to patients prescribed these drugs to inform them of the risks of suicidal thoughts or actions. FDA expects that the increased risk of suicidality is shared by all antiepileptic drugs and anticipates that the class labeling change will be applied broadly.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

- Acute low back pain
- Chronic low back pain
- Acute sciatica/radiculopathy
- Chronic sciatica/radiculopathy

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Treatment

CLINICAL SPECIALTY

Chiropractic
Family Practice
Internal Medicine
Orthopedic Surgery
Physical Medicine and Rehabilitation
Radiology
Sports Medicine

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Health Care Providers
Health Plans
Hospitals
Managed Care Organizations
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

- To improve the assessment and reassessment of adult patients with low back pain
- To reduce unnecessary imaging in adult patients with low back pain in the absence of "red flag" indicators or progressive symptoms

- To increase the use of the recommended conservative approach as first-line treatment, such as activity, self-care, and analgesics for adult patients with low back pain

TARGET POPULATION

Adult patients age 18 and over in primary care who have symptoms of low back pain or sciatica

Note: The guideline focuses on acute and chronic management, including indications for medical non-surgical or surgical referral. For workers' compensation patients, check with state guidelines where the patient resides and where the injury took place: http://www.workerscompensation.com/workers_comp_by_state.php.

INTERVENTIONS AND PRACTICES CONSIDERED

Evaluation

1. Medical screening evaluation
2. Patient history and physical examination
3. Laboratory testing if suspicion of cancer or infection
4. Lumbar spine x-rays (anterior to posterior [AP] and lateral [LAT] views) for specific indications
5. Referral to physical therapy or spine care specialist
6. Patient education regarding primary prevention

Treatment/Management

1. Home self care (e.g., patient education, anti-inflammatory medication, ice packs or heat, stress management)
2. Acute low back pain or sciatica/radiculopathy
    - Conservative treatment, including patient education; cold and heat therapies; analgesic medication; muscle relaxants; and activity recommendations including exercise programs
    - Discharge (return to work) or comprehensive reevaluation
    - Follow-up visits that include subjective pain rating, functional assessment, and clinician's objective assessment
    - Referral to trained spine specialist
3. Chronic low back pain:
    - Lumbar spine x-rays (AP and LAT views)
    - Active rehabilitation including patient education (good body mechanics), resumption of normal light activities, exercise program, management of psychosocial factors, and multidisciplinary approach
    - Consultation with/referral to a surgical or nonsurgical spine specialist
4. Chronic sciatica/radiculopathy:
    - Lumbar spine computed tomography (CT) or magnetic resonance imaging (MRI) if patient is potential surgical candidate
    - Active rehabilitation
    - Epidural steroid injection
    - Referral to a surgical or non-surgical spine specialist

MAJOR OUTCOMES CONSIDERED

- Number, duration, and intensity of pain episodes and recurrences
- Change in functional status (strength, mobility, endurance) associated with low back pain
- Time required to return to work
- Utilization of health care resources
- Diagnostic accuracy of various imaging techniques including lumbar spine computed tomography, magnetic resonance imaging, and computed tomography myelography
- Patient satisfaction

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

A literature search of clinical trials, meta-analysis, and systematic reviews is performed.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Key conclusions (as determined by the work group) are supported by a conclusion grading worksheet that summarizes the important studies pertaining to the conclusion. Individual studies are classed according to the system presented below, and are designated as positive, negative, or neutral to reflect the study quality.

Conclusion Grades:

Grade I: The evidence consists of results from studies of strong design for answering the question addressed. The results are both clinically important and consistent with minor exceptions at most. The results are free of any significant doubts about generalizability, bias, and flaws in research design. Studies with negative results have sufficiently large samples to have adequate statistical power.

Grade II: The evidence consists of results from studies of strong design for answering the question addressed, but there is some uncertainty attached to the conclusion because of inconsistencies among the results from the studies or

because of minor doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from weaker designs for the question addressed, but the results have been confirmed in separate studies and are consistent with minor exceptions at most.

Grade III: The evidence consists of results from studies of strong design for answering the question addressed, but there is substantial uncertainty attached to the conclusion because of inconsistencies among the results of different studies or because of serious doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from a limited number of studies of weak design for answering the question addressed.

Grade Not Assignable: There is no evidence available that directly supports or refutes the conclusion.

Study Quality Designations:

The quality of the primary research reports and systematic reviews are designated in the following ways on the conclusion grading worksheets:

Positive: indicates that the report or review has clearly addressed issues of inclusion/exclusion, bias, generalizability, and data collection and analysis.

Negative: indicates that these issues (inclusion/exclusion, bias, generalizability, and data collection and analysis) have not been adequately addressed.

Neutral: indicates that the report or review is neither exceptionally strong nor exceptionally weak.

Not Applicable: indicates that the report is not a primary reference or a systematic review and therefore the quality has not been assessed.

Classes of Research Reports:

A. Primary Reports of New Data Collection:

Class A:

- Randomized, controlled trial

Class B:

- Cohort study

Class C:

- Non-randomized trial with concurrent or historical controls
- Case-control study
- Study of sensitivity and specificity of a diagnostic test

- Population-based descriptive study

Class D:

- Cross-sectional study
- Case series
- Case report

B. Reports that Synthesize or Reflect upon Collections of Primary Reports:

Class M:

- Meta-analysis
- Systematic review
- Decision analysis
- Cost-effectiveness analysis

Class R:

- Consensus statement
- Consensus report
- Narrative review

Class X:

- Medical opinion

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Guideline Development Process

Each guideline, order set, and protocol is developed by a 6- to 12-member work group that includes physicians, nurses, pharmacists, other healthcare professionals relevant to the topic, along with an Institute for Clinical Systems Improvement (ICSI) staff facilitator. Ordinarily, one of the physicians will be the leader. Most work group members are recruited from ICSI member organizations,

but if there is expertise not represented by ICSI members, one or two members may be recruited from medical groups or hospitals outside of ICSI.

The work group meets for seven to eight three-hour meetings to develop the guideline. A literature search and review is performed and the work group members, under the coordination of the ICSI staff facilitator, develop the algorithm and write the annotations and footnotes and literature citations.

Once the final draft copy of the guideline is developed, the guideline goes to the ICSI members for critical review.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

The guideline developers reviewed published cost analyses.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Critical Review Process

Every newly developed guideline or a guideline with significant change is sent to Institute for Clinical Systems Improvement (ICSI) members for Critical Review. The purpose of critical review is to provide an opportunity for the clinicians in the member groups to review the science behind the recommendations and focus on the content of the guideline. Critical review also provides an opportunity for clinicians in each group to come to consensus on feedback they wish to give the work group and to consider changes necessary across systems in their organization to implement the guideline.

All member organizations are expected to respond to critical review guidelines. Critical review of guidelines is a criterion for continued membership within ICSI.

After the critical review period, the guideline work group reconvenes to review the comments and make changes, as appropriate. The work group prepares a written response to all comments.

Approval

Each guideline, order set, and protocol is approved by the appropriate steering committee. There is one steering committee each for Respiratory, Cardiovascular, Women's Health, and Preventive Services. The Committee for Evidence-based Practice approves guidelines, order sets, and protocols not associated with a particular category. The steering committees review and approve each guideline based on the following:

- Member comments have been addressed reasonably.
- There is consensus among all ICSI member organizations on the content of the document.
- To the extent of the knowledge of the reviewer, the scientific recommendations within the document are current.
- Either a critical review has been carried out, or to the extent of the knowledge of the reviewer, the changes proposed are sufficiently familiar and sufficiently agreed upon by the users that a new round of critical review is not needed.

Once the guideline, order set, or protocol has been approved, it is posted on the ICSI Web site and released to members for use. Guidelines, order sets, and protocols are reviewed regularly and revised, if warranted.

Revision Process of Existing Guidelines

ICSI scientific documents are revised every 12 to 36 months as indicated by changes in clinical practice and literature. Every 6 months, ICSI checks with the work group to determine if there have been changes in the literature significant enough to cause the document to be revised earlier than scheduled.

Prior to the work group convening to revise the document, ICSI members are asked to review the document and submit comments. During revision, a literature search of clinical trials, meta-analysis, and systematic reviews is performed and reviewed by the work group. The work group meets for 1-2 three-hour meetings to review the literature, respond to member organization comments, and revise the document as appropriate.

If there are changes or additions to the document that would be unfamiliar or unacceptable to member organizations, it is sent to members to review prior to going to the appropriate steering committee for approval.

Review and Comment Process

ICSI members are asked to review and submit comments for every guideline, order set, and protocol prior to the work group convening to revise the document.

The purpose of the Review and Comment process is to provide an opportunity for the clinicians in the member groups to review the science behind the recommendations and focus on the content of the order set and protocol. Review and Comment also provides an opportunity for clinicians in each group to come to consensus on feedback they wish to give the work group and to consider changes needed across systems in their organization to implement the guideline.

All member organizations are encouraged to provide feedback on order sets and protocol, however responding to Review and Comment is not a criterion for continued membership within ICSI.

After the Review and Comment period, the work group reconvenes to review the comments and make changes as appropriate. The work group prepares a written response to all comments.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Note from the National Guideline Clearinghouse (NGC) and the Institute for Clinical Systems Improvement (ICSI): For a description of what has changed since the previous version of this guidance, refer to Summary of Changes Report -- November 2008.

The recommendations for the management of adult low back pain are presented in the form of an algorithm with 23 components, accompanied by detailed annotations. An algorithm is provided for Adult Low Back Pain; clinical highlights and selected annotations (numbered to correspond with the algorithm) follow.

Class of evidence (A-D, M, R, X) and conclusion grade (I-III and Not Assignable) definitions are repeated at the end of the "Major Recommendations" field.

Clinical Highlights

- Back pain assessment should include a subjective pain rating, functional status, patient history including notation of presence or absence of "red flags" (Cauda Equina Syndrome or other conditions noted in Annotation #1) and psychosocial indicators, assessment of prior treatment and response, employment status, and clinician's objective assessment. *(Annotations #1, 4, 16, 19; Aim #1)*
- Reduce unnecessary imaging unless "red flag" indicators exist. *(Annotations #4, 19; Aim #2)*
- A conservative approach should be first-line treatment. Emphasize patient education and conservative home self-care, which includes limited bed rest, early ambulation, postural advice, resumption of light-duty activities, use of ice and heat, anti-inflammatory and analgesic over-the-counter medications, and early return to work or activities. *(Annotation #5; Aim #3)*
- Patients with acute low back pain should be advised to stay active and continue ordinary daily activity within the limits permitted by the pain. For chronic back pain, there is evidence that exercise therapy is effective. *(Annotations #10, 17; Aim #3)*
- Consult or refer to surgical spine specialist (neurosurgeon, orthopedic surgeon, or other) or non-surgical spine specialist (physical therapist, chiropractic provider, osteopathic or allopathic physician, or other) if conservative treatment fails. *(Annotation #9)*

Adult Low Back Pain Algorithm Annotations

1. **Patient Calls/Presents with Low Back Pain or Sciatica/Radiculopathy**

   Key Points:

   - Medical screening for low back pain should be performed via triage evaluation.

- If low back pain may be related to a possible work-related injury or workers' compensation claim, it is important to follow the Worker's Compensation Treatment Guidelines.

The patient calls the clinic or presents as a walk-in at the clinic. A medical screening should be performed via triage evaluation for phone contact and via provider examination for walk-ins. Each medical group may modify this proposed movement as needed.

The triage evaluation should first rule out emergent condition such as Cauda Equina Syndrome.

General Assessment:

- Recent back procedure or epidural anesthesia
- Location of pain:
  - Low back pain (LBP) (does not radiate past the knee)
  - Sciatica (LBP with radiation past the knee)
- Duration of symptoms, including date of injury or onset of symptoms:
  - Six weeks or less is acute
  - More than six weeks is chronic
- If injury: How did injury occur?
- Unrelenting or severe pain
  - Scale of 0 to 10, with 10 indicating most severe pain
- Other medical conditions
- History of previous back pain or surgery
- Psychosocial indications (See Appendix D, "Psychosocial Screening and Assessment Tools" in the original guideline document)

For worker's compensation patients, check with state guidelines where the patient resides and where the injury took place: http://www.workerscompensation.com/workers_comp_by_state.php.

Patient Education Regarding Primary Prevention

Providers in clinic systems are encouraged to provide primary education through other community education institutions/businesses to develop and make available patient education materials concerning back pain prevention and care of the healthy back. Emphasis should be on patient responsibility, workplace ergonomics, and home self-care treatment of acute low back pain. Employer groups should also make available reasonable accommodations for modified duties or activities to allow early return to work and minimize the risk of prolonged disability. Education is recommended for frontline supervisors in occupational strategies to facilitate an early return to work and to prevent prolonged disabilities *[R]*.

For other patient education resources, please see the Resources Available section of the original guideline document.

2. **Emergent or Urgent?**

Emergent - refer to emergency room (ER) for immediate evaluation

- Sudden onset or otherwise unexplained loss or changes in bowel or bladder control (retention or incontinence)
- Sudden onset or otherwise unexplained bilateral leg weakness
- Saddle numbness

Urgent - appointment within 24 hours:

- Fever 38 degrees C or 100.4 degrees F for greater than 48 hours
- Unrelenting night pain or pain at rest
- New onset (less than six weeks) of progressive pain with distal (below the knee) numbness or weakness of leg(s)
- Leg weakness
- Progressive neurological deficit

If attempts to triage are unsuccessful and the patient still requests a same-day appointment, this should be facilitated if at all possible.

3. **Evaluation Indicated?**

Appointment within two to seven days **if the answer to any of the following is positive**:

- Exertion injury (e.g., lifting, digging, reaching)
- History of back symptoms - has been seen before, at least once
- Chronic back pain lasting longer than six weeks
- Unexplained weight loss (greater than 10 pounds in six months)
- Over age 50
- History of cancer

4. **Primary Care Evaluation**

Key Points:

- Fear, financial problems, anger, depression, job dissatisfaction, family problems or stress can contribute to prolonged disability.
- Generally anterior to posterior (AP) and lateral (LAT) views x-rays are not helpful in the acute setting

The primary care evaluation includes a history and physical and consideration of psychosocial factors *[M]*. See Appendices A-D in the original guideline document for screening and assessment tools.

If a serious underlying disease such as cancer, Cauda Equina Syndrome, significant or progressive neurologic deficit, or other systemic illness is present, consult or refer.

Patient History Includes

Cancer risk factors:

- 50 years old or older
- History of cancer
- Unexplained weight loss
- Failure to improve after four to six weeks of conservative LBP therapy

If all four of the above risk factors for cancer are absent, studies suggest that cancer can be ruled out with 100% sensitivity.

Risk factors for possible spinal infection:

- Intravenous (IV) drug use
- Immunosuppression
- Urinary infection

Signs and symptoms of Cauda Equina Syndrome:

- Urinary retention (if no urinary retention, the likelihood of Cauda Equina Syndrome is less than 1 in 10,000)
- Saddle anesthesia, unilateral or bilateral sciatica, sensory and motor deficits, and abnormal straight leg raising are all common.

Signs or symptoms of neurologic involvement:

- Complaint of numbness or weakness in the legs
- Sciatica with radiation past the knee (increases the likelihood of a true radiculopathy rather than pain radiating only to the posterior thigh)
- Sciatica has such a high sensitivity (95%) that its absence makes lumbar disc herniation unlikely
- Disc herniation in a patient without sciatica would be unusual
- Because more than 95% of lumbar disc herniations occur at the L4-5 or L5-S1 levels, the neurologic exam should focus on the L5 and S1 nerve roots; however, upper lumbar nerve root involvement may be suggested when pain conforms to L2, L3, or L4 dermatomal distribution and is accompanied by anatomically congruent motor weakness or reflex changes.

Psychosocial indications:

- Belief that pain and activity are harmful
- "Sickness behaviors" such as extended rest
- Depressed or negative moods, social withdrawal
- Treatment that does not fit best practice
- Problems with claim and compensation
- History of back pain, time off, or other claims
- Problems at work or low job satisfaction
- Heavy work, unsociable hours
- Overprotective family or lack of support

Psychosocial indications can be barriers to recovery. Consider factors such as fear, financial problems, anger, depression, job dissatisfaction, family problems, or stress which can contribute to prolonged disability *[B], [C], [R]*.

Refer to the National Guideline Clearinghouse (NGC) summary of the Institute for Clinical Systems Improvement (ICSI) guideline Major Depression in Adults in Primary Care for more information.

For more information on psychosocial indications, see the New Zealand Acute Low Back Pain Guide: Incorporating the Guide to Assessing Psychosocial Yellow Flags in Acute Low Back Pain, 2003.

(See Appendix D, "Psychosocial Screening and Assessment Tools" in the original guideline document.)

Physical Examination Should Document

- Palpation for spinal tenderness
- Neuromuscular testing to include:
    - Ankle dorsiflexion strength
    - Great toe dorsiflexion strength
    - Ankle reflexes
    - Knee reflexes
    - Knee extension
    - Hip flexors
    - Sensory exam with pinprick sensation in the medial, dorsal, and lateral aspects of the foot
    - Significant or progressive neuromotor deficit requires surgical consultation.
- Straight leg raise (SLR) should be assessed bilaterally to evaluate for nerve root impingement, including but not limited to disc herniation.
    - Positive SLR is defined as pain in the posterior leg that radiates below the knee with the patient lying supine and the hip flexed 60 degrees or less, is suggestive of disc herniation.
    - Negative SLR rules out surgically significant disc herniation in 95% of cases.

Laboratory Evaluation

Consider blood work as necessary if suspicion of cancer or infection *[R]*.

Referral

Early referral to physical therapy or another trained non-surgical spine specialist could be considered. (See Annotations #13, "Re-evaluate and Consider Redirection," and Annotation #23, "Discuss Options and Consider Possible Surgical or Non-surgical Back Specialist" for details on specialties and treatments.)

- Referral could be considered when patient presents with severe incapacitating, disabling back or leg pain
- Patient has significant limitation of functional or job activities

Lumbar Spine X-ray (AP and LAT views) "Red Flag" Indications

Generally AP and LAT x-rays are *not* useful in the *acute* setting but *may* be warranted with:

- Unrelenting night pain or pain at rest (increased incidence of clinically significant pathology)
- History or suspicion of cancer (rule out metastatic disease)
- Fever above 38 degrees C (100.4 degrees F) for greater than 48 hours
- Osteoporosis
- Other systemic diseases
- Neuromotor or sensory deficit
- Chronic oral steroids
- Immunosuppression
- Serious accident or injury (fall from heights, blunt trauma, motor vehicle accident)--this does not include twisting or lifting injury unless other risk factors are present (e.g., history of osteoporosis)
- Clinical suspicion of ankylosing spondylitis

Other conditions that may warrant AP or LAT x-rays:

- Over 50 years old (increased risk of malignancy, compression fracture)
- Failure to respond to four to six weeks of conservative therapy
- Drug or alcohol abuse (increased incidence of osteomyelitis, trauma, fracture)

Oblique view x-rays are not recommended; they add only minimal information in a small percentage of cases, and more than double the exposure to radiation.

5. **Home Self-Care Treatment Program**

Key Points:

- Low back pain is common and most patients significantly improve in four to six weeks.
- The long-term course of low back pain is typically a return to previous activities though often with incomplete recovery of pain.
- Patients should be re-evaluated if there is not significant improvement in one to three weeks or symptoms progress.

If the patient has not been previously evaluated, attempt to differentiate between untreated acute pain and ongoing chronic pain. If a patient's pain has persisted for six weeks (or longer than the anticipated healing time), a thorough evaluation for the cause of the chronic pain is warranted. See the NGC summary of the ICSI guideline Chronic Pain for more information.

When patients are improving they should continue self-care as outlined *[M]*. Document the phone triage and home self-care treatment in the patient's medical record (e.g., no appointment is needed at this time, patient is improving with home self-care instructions and will call back if questions arise or condition changes).

Etiology

- Pain in the lower back is very common. It can be related to certain activities, poor posture, physical stress, or psychological stress. Ninety percent of back pain patients improve within four to six weeks.
- Consider telling the patient that approximately two-thirds of the people who recover from a first episode of acute low back symptoms will have another episode within 12 months. Unless the back symptoms are very different from the first episode or the patient has a new medical condition, expect improvement to be similar for each episode *[M]*.
- When pain or weakness lasts longer than six weeks, more specialized treatment(s) may be needed. For this reason it is important for the patient to keep the doctor informed of his or her progress.
- Other etiologies include pregnancy, labor, menstrual period, urinary tract problems, stomach upset with nausea, vomiting, and diarrhea

Instruct the patient to do the following:

- Carefully introduce activities back into his or her day as he or she begins to recover from the worst of the back pain episode. Light-duty activities and regular walking are good ways to get back into action.
- Apply ice packs or heat as preferred on the sore area to keep the inflammation down, and short duration in a position of comfort may be helpful.
- Use over-the-counter anti-inflammatory medications (e.g., aspirin, ibuprofen, naproxen sodium) or acetaminophen to help ease the pain and swelling in the lower back. If stomach complaints persist, call your provider.
- Encourage activity that does not worsen symptoms.
- Take time to relax. Tension will only make your back feel worse.

Instruct the patient to call back in one to three weeks if:

- No improvement with home management
- Significant pain persists beyond a week
- Symptoms persist, worsen, or progress
- Improvement in symptoms, reinforcement of self-care program

9. **Consult or Refer**

Complete a diagnostic workup or refer to appropriate medical specialty for serious underlying conditions (e.g., cancer, or other systemic illness.) Each medical group may have other indications for specialty referral.

Consult or refer to surgical spine specialist (neurosurgeon, orthopedic surgeon, or other) if:

- The patient is a surgical candidate.
- Signs or symptoms of Cauda Equina Syndrome are present.

- Signs or symptoms of progressive or significant neuromotor deficit (e.g., foot drop, functional muscle weakness such as hip flexion weakness, or quadriceps weakness) are present.
- Neurogenic "pseudo" claudication (atypical leg pain) that is unresponsive to conservative treatment.

10. **Has the Patient Failed Conservative Treatment?**

Key Points:

- Most patients who experience low back pain will have a recurrence within 12 months.
- Remaining active leads to a more rapid recovery with less chronic pain.
- Bed rest is not recommended. If the patient must rest, bed rest should be limited to no more than two days.
- It is important to evaluate non-physical factors that may impact returning to work or ongoing disability.
- The longer term course of low back pain is typically of a return to previous activities, though often with incomplete recovery from pain.

Conservative Treatment

- Most patients who seek attention for their back pain will improve within two weeks. Most patients experience significant improvement within four weeks *[R]*.
- Approximately two-thirds of the people who recover from a first episode of acute low back symptoms will have another episode within 12 months. Unless the back symptoms are very different from the first episode or the patient has a new medical condition, expect improvement to be similar for each episode *[M]*.
- Recommend cold packs or heat as preferred by the patient *[A]*.
- Recommend analgesic medication for short-term (less than 3 months) symptom control. Clinicians should consider the risk and benefits of any medication and prescribe the lowest effective dose possible *[A]*, *[M]*.
- Muscle relaxants are sometimes helpful for a few days but can cause drowsiness *[R]*.
- Opioid analgesics are rarely indicated in the treatment of acute low back pain. There is insufficient evidence to support opioid use in early treatment *[M]*. If used, it should be for only short-term intervention (less than two weeks) and accompanied by a comprehensive treatment plan.
- If the patient has been involved in home care and has had an adequate trial prior to the first visit, consider referral to a spine therapy professional on the initial visit *[A]*. (See Annotation #13, "Re-Evaluate and Consider Redirection.")
- While the work group acknowledges it is common practice to prescribe oral steroids for some patients, at this time there is not significant primary evidence to support it *[M]*, *[R]*

Activity Recommendations

Patients with acute low back pain should be advised to stay active and continue ordinary activity within the limits permitted by the pain. Remaining active leads to more rapid recovery with less chronic disability and fewer recurrent problems than either bed rest or back mobilizing exercises. *[Conclusion Grade I: See Conclusion Grading Worksheet A -- Annotation #10, (Conservative Treatment) in the original guideline document]*.

- Activity modification
    - Continue routine activity while paying attention to correct posture.
    - Patients with acute low back problems may be more comfortable if they temporarily limit or avoid specific activities known to increase mechanical stress on the spine, especially prolonged unsupported sitting, heavy lifting, and bending or twisting the back, especially while lifting *[M]*.
    - Activity recommendations for the employed patient with acute low back symptoms should take into consideration the patient's age and general health, and the physical demands of the patient's job *[A]*.
    - Patients should discontinue any activity or exercise that causes spread of symptoms (peripheralization).
- Bed rest
    - Bed rest is not recommended. If the patient must rest, bed rest should be limited to no more than two days and only as an option for patients with severe initial symptoms of primary leg pain.
    - A gradual return to normal activities is more effective and leads to more rapid improvement with less chronic disability than prolonged bed rest for treating acute low back problems *[A]*.
    - Prolonged bed rest for more than four days may lead to debilitation and is not recommended for treating acute low back problems *[R]*.
- Exercise
    - Patients should discontinue any activity or exercise that causes spread of symptoms (peripheralization) *[R]*.
    - Advice to stay active and to continue ordinary activity as normally as possible is likely to give faster return to work, less chronic disability, and fewer recurrent problems *[M]*.
    - Consultation with a non-surgical spine specialist, who can evaluate individual characteristics and symptoms and establish a specific exercise program, is recommended *[A]*, *[B]*.

Self Care Brochure (See Support for Implementation, "Resources Available" in the original guideline document):

In general, brochures and information that place a greater emphasis on reducing fear and anxiety and promoting active self-management have a greater opportunity for improving outcomes than traditional brochures that emphasize anatomy, ergonomics, and specific back exercises *[A]*.

Specific content recommendations include:

- Absence of serious disease is likely when "red flags" are not present
- Hurt does not equal harm.
- There is a good prognosis for low back pain. The majority of patients experience significant improvement in two to four weeks *[R]*.
- Bed rest is not recommended and should be limited to no more than two days.
- Light activity will not further injure the spine and light activity typically helps speed recovery.
- A progressive resumption of work and activity levels leads to better short-term and long-term outcomes.
- Information and advice may be helpful regarding specific painful or limited activities, such as sitting, lifting, getting up from bed.

Return to Work

- Tell patients experiencing an episode of acute back pain that their pain is likely to improve and that a large majority of patients return to work quickly. They should understand that complete pain relief usually occurs after, rather than before, resumption of normal activities and their return to work can be before they have complete pain relief. Working despite some residual discomfort poses no threat and will not harm them *[R]*.
- All persons recovering from back pain should understand that episodes of back pain may recur but can be handled similarly as the one from which they are recovering.
- Patients can reduce the likelihood of back pain recurrence by making exercise and lifestyle changes, as noted elsewhere.
- Consider using the following questions to guide your discussion about non-physical factors that can significantly impact risk for ongoing disability and return to work *[R]*:
    - Do you enjoy the tasks involved in your job?
    - Do you get along with your closest or immediate supervisor?

Follow-Up Visit

Because most patients with acute pain improve by two weeks, a conservative treatment approach is recommended *[R]*. Low back pain patients who are not improving or who experience significant limitation of daily activity at home or work should contact their provider within one to three weeks of the initial evaluation *[R]*. Patients who are improving should continue home self-care.

Red flag and psychosocial indicators should be reviewed and evaluated at each contact/visit *[R]*. It is the consensus of the work group that an assessment that includes a subjective pain rating, functional assessment, and a clinician's objective assessment should be done at each visit.

It is the consensus of the work group that patients who are improving should consider a follow-up with their provider. The benefit is to reinforce education and lifestyle changes that have enabled the patient to improve. This provides for outcome measures to be assessed as identified in the aims and measures section of the original guideline document.

13. **Re-evaluate and Consider Redirection**

Key Points:

- Request a non-surgical spine care specialist who demonstrates competency in providing therapies based on continuing education and effective techniques supported by literature.

Choice of the trained professional will be determined by availability and preference of individual medical providers and organization systems. The patient and/or physician should request a trained non-surgical spine specialist who demonstrates competency in providing therapies for patients with low back pain based on effective techniques supported by literature as outlined in this guideline.

These therapies include education, exercise programs, and appropriate use of manual/manipulative therapies *[B]*, *[C]*. Participants should be in additional training and in ongoing continuing education courses in manual treatment of the spine. Individuals who may have training in these therapies include physical therapists, chiropractic providers, osteopathic or allopathic physicians.

The following should be considered when selecting a non-surgical spine specialist who will effectively evaluate and treat the lumbar spine, pelvic girdle (including sacroiliac [SI] joint), and muscle imbalances (piriformis) *[R]*:

- Years of experience treating spine patients
- Volume of patients treated for spine dysfunction in the past year
- Number of referrals an individual provider receives on a regular basis
- Provides treatment interventions which include manipulation, exercise, and education
- Average number of visits per episode of care for low back pain
- Percentage of patients who return to previous level of activity

Indications for referral include:

- Failure to make improvement with home self-care after two weeks *[R]*
- Severe incapacitating and disabling back or leg pain
- Significant limitation of functional or job activities

The professional's treatment plan should include both education and exercise. The treatment plan may include modalities, if necessary, to enable an individual to carry out an exercise program and self-care. It may also include limited passive treatments such as manual therapy (e.g., includes manipulation and mobilization), among others *[M]*. Spinal manipulation should not be done if pre-manipulative testing peripheralizes symptoms.

Passive treatments are to be minimized and used only to progress an individual toward independence in exercise and self-care. Active treatment such as exercise must be introduced within a week of initiating passive treatments.

There are no studies the work group is aware of regarding time frames. There is work group consensus on the following:

- Within four visits, the patient must display documented improvement in order to continue therapy. If no improvement is noted, a comprehensive re-evaluation should be performed by the spine care professional for other causes of low back pain, including regional SI joint dysfunction.
- Continued improvement must be documented for continued therapy. Typically no more than four to six visits are needed.
- Somewhere between 9 and 12 visits or between 4 and 6 weeks the patient should be reassessed.

Consult or refer to non-surgical spine *physician* if:

- Neuromotor deficits persist after four to six weeks of conservative treatment (does not include minor sensory changes or reflex changes).
- The patient has chronic sciatica with positive SLR longer than six weeks.
- The patient has sciatica unresponsive with conservative treatment longer than six weeks.
- The patient has atypical chronic leg pain (negative SLR).
- The patient has new or progressive neuromotor deficits.

15. **Is Pain Chronic (Greater Than Six Weeks)?**

A patient with "recurrent acute" episodes will continue a trial of conservative treatment when the current symptoms are six weeks or less from onset. "Recurrent acute" means symptoms at some point improved, separating the current episode from previous episodes. When the current symptoms are more than six weeks from onset, the patient should be regarded as chronic and the provider should move to the corresponding sections of the algorithm (Annotation #16 and beyond in the original guideline document).

If at initial evaluation the patient is identified as chronic low back pain, see Annotation # 16, "Chronic Low Back Pain" below. For chronic sciatica/radiculopathy see Annotation #19.

16. **Chronic Low Back Pain**

A comprehensive re-evaluation including a general assessment (see Annotation #4, "Primary Care Evaluation") should be done for patients not improving after six weeks. Most patients with acute back pain will improve within six weeks. Back pain and sciatica that persist longer than six weeks are defined as chronic.

An assessment that includes a subjective pain rating, functional assessment, and a clinician's objective assessment should be done.

Psychosocial factors can contribute to prolonged disability *[B]*, *[M]*, *[R]*. See Appendix D, "Psychosocial Screening and Assessment Tools" in the original

guideline document. See the NGC summary of ICSI guideline Major Depression in Adults in Primary Care for the diagnosis and treatment of depression.

For patients not improving after six weeks see "Lumbar Spine X-Rays (AP and LAT views) if Indicated" in this annotation and Annotation #19, "Chronic Sciatica/Radiculopathy," for imaging considerations.

Of the 10% of patients with chronic symptoms, 90% fall into the chronic LBP category and only 10% fall into the chronic sciatica category.

Physical factors which may lead to delayed recovery or prolonged disability include malignancy, infection, metabolic, or a bio-mechanical condition (e.g., sacroiliac joint dysfunction [SJD]) *[C]*, *[D]*. Consider further evaluation for systemic problems.

If the patient is not better, consider other etiologies for low back pain such as:

- Fractures
- Spondylarthopathies
- Infection
- Tumor
- Abdominal/pelvic pathologies
- Other sites of origin for low back pain such as facet syndrome, piriformis syndrome, stenosis, or claudication

Lumbar Spine X-rays (AP and LAT views) if Indicated

Patients with chronic LBP or acute LBP who are not improving should be considered for further diagnostic testing. (See Annotation #4, "Primary Care Evaluation" above.) Oblique view x-rays are not recommended; they add only minimal information in a small percentage of cases, and more than double the exposure to radiation *[C]*, *[M]*.

Several x-ray findings are of questionable clinical significance and may be unrelated to back pain. These findings include:

- Single disk space narrowing
- Spondylolysis
- Lumbarization
- Sacralization
- Schmorl nodes
- Spina bifida occulta
- Disk calcification
- Mild to moderate scoliosis

17. **Active Rehabilitation**

There is strong evidence that exercise therapy is effective for chronic low back pain. However, there is inconclusive evidence in favor of one exercise

over the other--flexion, extension, fitness. *[Conclusion Grade I: See Conclusion Grading Worksheet B -- Annotation #17 (Active Rehabilitation) in the original guideline document]*. High-grade mobilization/manipulation has been shown to be effective early in treatment when followed by appropriate active rehabilitation.

The treatment of chronic low back pain should include:

- Written education materials and advice by provider *[A]*
- Active self-management
- Gradual resumption of normal light activities as tolerated
- Prevention - good body mechanics
- Exercise - many studies show the benefit of an exercise program with chronic low back pain
    - Inconclusive evidence in favor of one exercise over the other (flexion, extension, or fitness) *[M]*
    - Consider a graded active exercise program *[A]*.
    - Consider specific exercises to strengthen the core trunk stabilizing muscles *[A]*.
    - Consider intensive exercise program *[A]*.
- Assess and manage psychosocial factors
- Multidisciplinary approach *[D]*

See also the NGC summary of the ICSI guideline Assessment and Management of Chronic Pain.

19. **Chronic Sciatica/Radiculopathy**

See Annotation #16, "Chronic Low Back Pain" for a comprehensive physical and psychosocial evaluation including a subjective pain assessment, functional assessment, and a clinician's objective assessment.

Magnetic Resonance Imaging (MRI) or Lumbar Spine Computed Tomography (CT) Imaging Indications

MRI and CT generally are not useful in the early evaluation of low back pain or sciatica unless the patient has major or progressive neurological symptoms, or there is a suspicion of cancer or infection. Generally, cross-sectional imaging is indicated when initial non-invasive conservative regimens have failed and surgery or a therapeutic injection are considerations. If the primary care provider is uncertain whether an MRI or CT should be ordered, consultation with an appropriate consultant when the patient meets surgical referral criteria should be considered. (See Annotation #21, "Consider Epidural Steroid Injection Prior to Surgical Intervention.") Each medical group may have specific arrangements for ordering CT, MRI, or other special diagnostic tests prior to referral to a surgical back specialist. See Appendix F, "General Guidelines for CT and MRI Order Sets for Adult Low Back Pain," in the original guideline document for order set general guidelines.

When indicated, MRI is the preferred diagnostic test in the evaluation of patients with low back pain with or without radiculopathy.

CT myelography is a useful study in patients who have a contraindication to MRI, for whom MRI findings are inconclusive, or for whom there is a poor correlation between symptoms and MRI findings. CT myelography shows comparable accuracy and is complementary to MRI. CT myelography is invasive, however, and invokes the risk of allergic reaction to contrast and post-myelographic headache.

Plain CT is a useful study in patients who have a contraindication to MRI, for whom MRI findings are inconclusive, for whom there is a poor correlation between symptoms and MRI findings, and for whom CT myelogram is deemed inappropriate. CT can be used in the initial evaluation of patients with back pain and/or radiculopathy when high-quality MRI is not available *[C]*, *[D]*, *[R]*.

The Adult Low Back Pain guideline work group has listed advantages for both CT and MRI imaging and a list of conditions for each. This list is not meant to be comprehensive but to aid the clinician in making a decision.

MRI Indications

- Major or progressive neurologic deficit (e.g., foot drop or functionally limiting weakness such as hip flexion or knee extension)
- Cauda Equina Syndrome (loss of bowel or bladder control or saddle anesthesia)
- Progressively severe pain and debility despite conservative therapy
- Severe or incapacitating back or leg pain (e.g., requiring hospitalization, precluding walking, or significantly limiting the activities of daily living)
- Clinical or radiological suspicion of neoplasm (e.g., lytic or sclerotic lesion on plain radiographs, history of cancer, unexplained weight loss, or systemic symptoms)
- Clinical or radiological suspicion of infection (e.g., endplate destruction of plain radiographs, history of drug or alcohol abuse, or systemic symptoms)
- Trauma (fracture with neurologic deficit, compression fracture evaluation in elderly patients with question of underlying malignancy, characterization in anticipation of vertebroplasty/kyphoplasty, stress fracture or subacute spondylosis in a patient less than 18 years of age)
- Severe low back pain or radicular pain, unresponsive to conservative therapy, with indications for surgical intervention or therapeutic injection

For patients with mild to moderate claustrophobia, benzodiazepines one hour prior to scan may be effective. The patient will need to be accompanied by a driver.

MRI Advantages

- Better visualization of soft tissue pathology; better soft tissue contrast
- Direct visualization of neurological structures
- Improved sensitivity for cord pathology and for intrathecal masses
- Improved sensitivity for infection and neoplasm

- No radiation exposure
- Safer for women who are pregnant, especially in the 1st trimester due to no radiation exposure

CT Indications

- Major or progressive neurologic deficit (e.g., foot drop or functionally limiting weakness such as hip flexion or knee extension)
- Cauda Equina Syndrome (loss of bowel or bladder control or saddle anesthesia)
- Progressively severe pain and debility despite conservative therapy
- Clinical or radiological suspicion of neoplasm (e.g., lytic or sclerotic lesion on plain radiographs, history of cancer, unexplained weight loss, or systemic symptoms)
- Bone tumors (to detect or characterize)
- Severe or incapacitating back or leg pain (e.g., requiring hospitalization, precluding walking, or significantly limiting the activities of daily living)
- Severe low back pain or radicular pain, unresponsive to conservative therapy, with indications for surgical intervention or therapeutic injection
- Trauma (rule out or characterize fracture, evaluate for healing)

CT Advantages

- Better visualization of calcified structures
- Direct visualization of fractures
- Direct visualization of fracture healing and fusion mass
- More accurate in the assessment of certain borderline or active benign tumors
- More available and less costly
- Better accommodation for patients over 300 pounds and patients with claustrophobia
- Safer for patients with implanted electrical devices or metallic foreign bodies
- Less patient motion. Particularly useful for patients who cannot lie still or for patients who cannot cooperate for an MRI

Other special diagnostic tests such as myelogram, electromyography (EMG), radio nuclide studies (RNS), and bone scan should be ordered as each medical group dictates and consider the preference of the specialist when referral is planned *[C]*, *[R]*.

See Appendix E, "Upright and Positional Imaging," in the original guideline document for more information.

21. **Consider Epidural Steroid Injection Prior to Surgical Intervention**

Key Points:

- Epidural steroid injections should only be considered after initial appropriate conservative treatment program has failed.
- Successful epidural steroid injections may allow patients to advance in a conservative treatment program.
- Epidural steroid injects should be performed under fluoroscopy with contrast for best results.

There is limited evidence for epidural steroid injections; therefore, it is important that outcome data be gathered in order to grow the evidence.

The goal of epidural steroid injections in patients with back or leg pain and stenosis or a herniated disc on MRI or CT is pain control and functional improvement. Several studies have shown that a single epidural injection affords short-term relief from pain *[D]*, *[M]*, *[R]* although in one randomized controlled trial, the steroid group seemed to experience a "rebound" phenomenon *[A]*.

Based on limited data, the results appear promising. However, at this time there is insufficient evidence for the efficacy of epidural steroid injections *[R]*. Epidural steroid injections should only be considered after initial appropriate conservative treatment program has failed. Successful epidural steroid injections may allow patients to advance in a conservative treatment program.

Injections should be performed under fluoroscopy and with contrast in order to deliver cortisone as close to the disc herniation, area of stenosis, or nerve root impingement as determined by MRI or CT, and with as little morbidity as possible *[R]*. Failure of treatment may result from a failure to deliver medications to the treatment field.

No study has shown a clear advantage of one approach (interlaminar, caudal, or transforaminal), type of cortisone or volume of injectate *[R]*. The approach needs to be individualized to each patient.

Procedural morbidity also varies with each approach *[R]*. With interlaminar injections there is a risk of intrathecal injection and subsequent arachnoiditis, as well as post-procedural headaches. With transforaminal injections, patients frequently report significant, although in most cases transient, leg pain and there is a risk of spinal cord infarction when injected above L2 *[D]*.

Patient Selection

- Patients should have, predominantly, complaints of leg pain in a dermatomal distribution with corroborative examination findings for radiculopathy (reflex changes, possible motor weakness, and root tension signs.) In addition, the pain should be of the severity that significantly limits function and quality of life and has not responded to oral analgesic medications and other conservative care measures.
- Corroborative neural axis imaging is required, either MRI or CT, with evidence of disk disease or bony stenosis which fits with the clinical syndrome.

- Patients should have no contraindications to injection therapy, including:
    - No signs or symptoms of active infection either systemically or locally
    - No history of bleeding disorders or current use of anticoagulants such as warfarin or clopidogrel; allow the patient to "drift" to the lowest effective International Normalized Ratio (INR) prior to procedure
    - No allergies to local anesthetic agents, contrast agents, or corticosteroids
    - No prior complications to corticosteroid injections
- Pregnancy is a contraindication for the use of fluoroscopy.
- Caution should be used in diabetic patients because of altered glycemic control, which is typically transient.
- Patients with congestive heart failure need to be aware of steroid-induced fluid retention.
- Though non-steroidal anti-inflammatory drug (NSAID) use is not a contraindication to injections, some practitioners discontinue NSAIDs several days prior to injection.

23. **Discuss Options and Consider Possible Surgical or Non-Surgical Spine Specialist**

    Key Points:

    - The appearance of a disc herniation does not rule out a course of conservative therapy. Unless "red flag" indications are present, all patients should undergo a trial of conservative therapy.
    - The decision to operate is a clinical decision based on the presence of severe, uncontrolled pain, profound or progressive neurological symptoms, or a failure to respond to conservative therapy.

    Refer to the original guideline document for indications for the following specialty referrals: non-surgical spine specialist, rheumatology, surgical spine specialist.

    Special diagnostic tests can be used to help clinicians decide the appropriate referral to a specialist. To decide which test, consult with subspecialty physicians.

    Patients with large, extruded, sequestered, or high-signal-intensity disc herniations do not have a worse prognosis than do patients with smaller contained disc herniations or protrusions. The presence of a disc extrusion or sequestration is not an indication for immediate surgery *[A]*, *[R]*.

    - The appearance of a disc herniation on MRI/CT (including extruded/sequestered disc) does not determine whether an individual patient will respond to conservative therapy. Assuming that the patient's pain can be controlled and that no "red flags" or contraindications exist, all patients should undergo a trial of conservative therapy *[D]*, *[R]*.

- The decision to operate is a clinical one, not a radiologic one, and is generally based on the presence of severe, uncontrolled pain, profound or progressive neurological symptoms, or a failure to respond to conservative therapy *[D]*.
- Even though it was not discussed above, it is important to emphasize the concept that a disc herniation on MRI/CT is of relevance only with respect to specific clinical symptoms. Disc herniations can be seen in asymptomatic patients, and one can surmise from the literature quoted that if a patient's symptoms resolve and the disc herniation does not resolve, it will be present on the next examination *[C]*, *[D]*.

Definitions:

Conclusion Grades:

Grade I: The evidence consists of results from studies of strong design for answering the question addressed. The results are both clinically important and consistent with minor exceptions at most. The results are free of any significant doubts about generalizability, bias, and flaws in research design. Studies with negative results have sufficiently large samples to have adequate statistical power.

Grade II: The evidence consists of results from studies of strong design for answering the question addressed, but there is some uncertainty attached to the conclusion because of inconsistencies among the results from the studies or because of minor doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from weaker designs for the question addressed, but the results have been confirmed in separate studies and are consistent with minor exceptions at most.

Grade III: The evidence consists of results from studies of strong design for answering the question addressed, but there is substantial uncertainty attached to the conclusion because of inconsistencies among the results of different studies or because of serious doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from a limited number of studies of weak design for answering the question addressed.

Grade Not Assignable: There is no evidence available that directly supports or refutes the conclusion.

Classes of Research Reports:

A. Primary Reports of New Data Collection:

Class A:

- Randomized, controlled trial

Class B:

- Cohort study

Class C:

- Non-randomized trial with concurrent or historical controls
- Case-control study
- Study of sensitivity and specificity of a diagnostic test
- Population-based descriptive study

Class D:

- Cross-sectional study
- Case series
- Case report

B. Reports that Synthesize or Reflect upon Collections of Primary Reports:

Class M:

- Meta-analysis
- Systematic review
- Decision analysis
- Cost-effectiveness analysis

Class R:

- Consensus statement
- Consensus report
- Narrative review

Class X:

- Medical opinion

CLINICAL ALGORITHM(S)

A detailed and annotated clinical algorithm is provided for Adult Low Back Pain.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is classified for selected recommendations (see "Major Recommendations").

In addition, key conclusions contained in the Work Group's algorithm are supported by a grading worksheet that summarizes the important studies pertaining to the conclusion. The type and quality of the evidence supporting these key recommendations (i.e., activity recommendations for patients with

acute low back pain; exercise therapy for patients with chronic back pain) is graded for each study.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate medical evaluation, treatment, and management of low back pain in adults, including:

- Appropriate use of conservative treatment as a first-line approach
- Reduced use of unnecessary imaging
- Appropriate assessment and reassessment of adult patients with low back pain

POTENTIAL HARMS

Epidural Steroid Injection

- Caution should be used in diabetic patients because of altered glycemic control which is typically transient. Also, patients with congestive heart failure need to be aware of steroid-induced fluid retention.
- With interlaminar injections there is a risk of intrathecal injection and subsequent arachnoiditis, as well as post-procedural headaches. With transforaminal injections, patients frequently report significant, although in most cases transient, leg pain and there is a risk of spinal cord infarction when injected above L2.

Computed Tomography (CT)

CT myelography is invasive, and invokes the risk of allergic reaction to contrast and post-myelographic headache.

CONTRAINDICATIONS

CONTRAINDICATIONS

- *Fluoroscopy*: Contraindications include pregnancy.
- *Steroid injections*: Contraindications include patients with signs and symptoms of active infection either systemically or locally; history of bleeding disorders or current use of anticoagulants such as warfarin or clopidogrel; allergies to local anesthetic agents, contrast agents, or corticosteroids; prior complications to corticosteroid injections.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- This clinical guideline is designed to assist clinicians by providing an analytical framework for the evaluation and treatment of patients, and is not intended either to replace a clinician's judgment or to establish a protocol for all patients with a particular condition. A guideline will rarely establish the only approach to a problem.
- This clinical guideline should not be construed as medical advice or medical opinion related to any specific facts or circumstances. Patients are urged to consult a health care professional regarding their own situation and any specific medical questions they may have.
- The Adult Low Back Pain guideline work group has listed advantages for both computed tomography (CT) and magnetic resonance imaging (MRI) and a list of conditions for each. This list is not meant to be comprehensive but to aid the clinician in making a decision.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Once a guideline is approved for general implementation, a medical group can choose to concentrate on the implementation of that guideline. When four or more groups choose the same guideline to implement and they wish to collaborate with others, they may form an action group.

In the action group, each medical group sets specific goals they plan to achieve in improving patient care based on the particular guideline(s). Each medical group shares its experiences and supporting measurement results within the action group. This sharing facilitates a collaborative learning environment. Action group learnings are also documented and shared with interested medical groups within the collaborative.

Currently, action groups may focus on one guideline or a set of guidelines such as hypertension, lipid treatment, and tobacco cessation.

Detailed measurement strategies are presented in the original guideline document to help close the gap between clinical practice and the guideline recommendations. Summaries of the measures are provided in the National Quality Measures Clearinghouse (NQMC).

IMPLEMENTATION TOOLS

Chart Documentation/Checklists/Forms
Clinical Algorithm
Patient Resources
Pocket Guide/Reference Cards
Quality Measures
Resources

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

RELATED NQMC MEASURES

- Adult low back pain: percentage of patients with a diagnosis of back pain for whom the physician ordered imaging studies during the six weeks after pain onset, in the absence of "red flag."

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Institute for Clinical Systems Improvement (ICSI). Adult low back pain. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2008 Nov. 66 p. [105 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1994 Jun (revised 2008 Nov)

GUIDELINE DEVELOPER(S)

Institute for Clinical Systems Improvement - Private Nonprofit Organization

GUIDELINE DEVELOPER COMMENT

Organizations participating in the Institute for Clinical Systems Improvement (ICSI): Affiliated Community Medical Centers, Allina Medical Clinic, Altru Health System, Aspen Medical Group, Avera Health, CentraCare, Columbia Park Medical Group, Community-University Health Care Center, Dakota Clinic, ENT Specialty Care, Fairview Health Services, Family HealthServices Minnesota, Family Practice Medical Center, Gateway Family Health Clinic, Gillette Children's Specialty Healthcare, Grand Itasca Clinic and Hospital, HealthEast Care System, HealthPartners Central Minnesota Clinics, HealthPartners Medical Group and Clinics, Hutchinson Area Health Care, Hutchinson Medical Center, Lakeview Clinic, Mayo Clinic, Mercy Hospital and Health Care Center, MeritCare, Mille Lacs Health System, Minnesota Gastroenterology, Montevideo Clinic, North Clinic, North

Memorial Care System, North Suburban Family Physicians, Northwest Family Physicians, Olmsted Medical Center, Park Nicollet Health Services, Pilot City Health Center, Quello Clinic, Ridgeview Medical Center, River Falls Medical Clinic, Saint Mary's/Duluth Clinic Health System, St. Paul Heart Clinic, Sioux Valley Hospitals and Health System, Southside Community Health Services, Stillwater Medical Group, SuperiorHealth Medical Group, University of Minnesota Physicians, Winona Clinic, Ltd., Winona Health

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SOURCE(S) OF FUNDING

The following Minnesota health plans provide direct financial support: Blue Cross and Blue Shield of Minnesota, HealthPartners, Medica, Metropolitan Health Plan, PreferredOne and UCare Minnesota. In-kind support is provided by the Institute for Clinical Systems Improvement's (ICSI) members.

GUIDELINE COMMITTEE

Committee on Evidence Based Practice

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

ICSI has adopted a policy of transparency, disclosing potential conflict and competing interests of all individuals who participate in the development, revision and approval of ICSI documents (guidelines, order sets and protocols). This applies to all work groups (guidelines, order sets and protocols) and committees (Committee on Evidence-Based Practice, Cardiovascular Steering Committee,

Women's Health Steering Committee, Preventive & Health Maintenance Steering Committee and Respiratory Steering Committee).

Participants must disclose any potential conflict and competing interests they or their dependents (spouse, dependent children, or others claimed as dependents) may have with any organization with commercial, proprietary, or political interests relevant to the topics covered by ICSI documents. Such disclosures will be shared with all individuals who prepare, review and approve ICSI documents.

Michael Goertz, MD received speaker's fees from Boston Scientific and Pfizer.

Adam Locketz, MD received speaker's fees from Boston Scientific.

No other work group members have potential conflicts of interest to disclose.

ICSI's conflict of interest policy and procedures are available for review on ICSI's website at www.icsi.org.

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Adult low back pain. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2006 Sep. 65 p.

GUIDELINE AVAILABILITY

Electronic copies: Available from the Institute for Clinical Systems Improvement (ICSI) Web site.

Print copies: Available from ICSI, 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; telephone, (952) 814-7060; fax, (952) 858-9675; Web site: www.icsi.org; e-mail: icsi.info@icsi.org.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Adult low back pain. Executive summary. Bloomington (MN): Institute for Clinical Systems Improvement, 2008 Nov. 1 p. Electronic copies: Available from the Institute for Clinical Systems Improvement (ICSI) Web site.
- ICSI pocket guidelines. May 2007 edition. Bloomington (MN): Institute for Clinical Systems Improvement, 2007.

Print copies: Available from ICSI, 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; telephone, (952) 814-7060; fax, (952) 858-9675; Web site: www.icsi.org; e-mail: icsi.info@icsi.org.

Also, the appendices of the original guideline document contain questionnaires and assessment tools helpful for assessing low back pain.

PATIENT RESOURCES

The following is available:

- Adult low back pain. Bloomington (MN): Institute for Clinical Systems Improvement, 2006 Oct. 22 p.

Electronic copies: Available in Portable Document Format (PDF) from the Institute for Clinical Systems Improvement (ICSI) Web site.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC STATUS

This summary was completed by ECRI on June 30, 1999. The information was verified by the guideline developer on August 4, 1999. This summary was updated by ECRI on October 13, 2000 and January 8, 2002. This summary was updated on March 14, 2003. The updated information was verified by the guideline developer on May 15, 2003. This summary was updated again on April 26, 2004 and October 13, 2004. This summary was updated by ECRI on January 12, 2005 following the release of a public health advisory from the U.S. Food and Drug Administration regarding the use of some non-steroidal anti-inflammatory drug products. This summary was updated on April 15, 2005 following the withdrawal of Bextra (valdecoxib) from the market and the release of heightened warnings for Celebrex (celecoxib) and other nonselective nonsteroidal anti-inflammatory drugs (NSAIDs). This summary was updated by ECRI on June 16, 2005, following the U.S. Food and Drug Administration advisory on COX-2 selective and non-selective non-steroidal anti-inflammatory drugs (NSAIDs). This NGC summary was updated by ECRI Institute on October 20, 2005, December 5, 2006, and April 14, 2009. This summary was updated by ECRI Institute on May 1, 2009 following the U.S. Food and Drug Administration advisory on antiepileptic drugs.

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Date Modified: 5/4/2009


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